

## ABSTRACT

A direction finding radiation detector for detecting the direction of incidence of radioactive rays, comprising: a plurality of scintillators (41, 42, 43) (101, 102, 103) made of the same material, being arranged to overlap circumferentially at least in part so that they are shadowed by each other from radioactive rays incident in circumferential directions and so that light emitted from one of the scintillators is not incident on the other scintillators; and photoreceptor devices (51, 52, 53) (111, 112, 113) having light receiving surfaces optically coupled to the respective scintillators, wherein a combination of proportions of radioactive rays incident directly on the respective scintillators and radioactive rays incident indirectly thereon, being shadowed by the other scintillators, varies with the direction of incidence circumferentially. This achieves weight saving of the detector, improves the detection efficiency of the radioactive rays, elaborates detection information through measurements in half the circumferential directions or all the circumferential directions, and simplifies setting for improved operability.